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Collana	Lecture Notes in Computer Science, , 1611-3349 ; ; 1641
Disciplina	005.13/1
Soggetti	Compilers (Computer programs) Software engineering Computer science Computer programming Machine theory Compilers and Interpreters Software Engineering Computer Science Logic and Foundations of Programming Programming Techniques Formal Languages and Automata Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Invited Papers -- High Level System Design and Analysis Using Abstract State Machines -- Enriching the Software Development Process by Formal Methods -- Regular Papers -- Formal Program Development in Geometric Modeling -- Design of Distributed Multimedia Applications (DAMD) -- Structured Formal Verification of a Fragment of the IBM S/390 Clock Chip -- Automated Test Set Generation for Statecharts -- Rigorous Compiler Implementation Correctness: How to Prove the Real Thing Correct -- Translation Validation: From DC+ to C -- A Practical

Hierarchical Design by Timed Simulation Relations for Real-Time Systems -- A Lightweight Approach to Formal Methods -- An Open Environment for the Integration of Heterogeneous Modelling Techniques and Tools -- Integrating Domain Specific Language Design in the Software Life Cycle -- Flexible and Reliable Process Model Properties: An Integrated Approach -- A Symbolic Model Checker for ACTL -- Critical Systems Validation and Verification with CSP and FDR -- UniForM Perspectives for Formal Methods -- The UniForM WorkBench A Higher Order Tool Integration Framework -- Application Papers -- Two Real Formal Verification Experiences: ATM Switch Chip and Parallel Cache Protocol -- Formal Methods in the Specification of the Emergency Closing System of the Eastern Scheldt Storm Surge Barrier -- The New Topicality of Using Formal Models of Security Policy within the Security Engineering Process -- Tool Papers -- Towards Comprehensive Tool Support for Abstract State Machines: The ASM Workbench Tool Environment and Architecture -- The IFAD VDM Tools -- KIV 3.0 for Provably Correct Systems -- PVS: An Experience Report -- Overview over the Project Quest -- VSE: Controlling the Complexity in Formal Software Developments -- The wHOLe System -- Z/EVES Version 1.5: An Overview.

Sommario/riassunto

This volume contains the contributions presented at the International Workshop on Current Trends in Applied Formal Methods organized October 7-9, 1998, in Boppard, Germany. The main objective of the workshop was to draw a map of the key issues facing the practical application of formal methods in industry. This appears to be particularly timely with safety and security issues becoming a real obstacle to industrial software and hardware development. As a consequence, almost all major companies have now set up departments or groups to work with formal methods and many European countries face a severe labour shortage in this new field. Tony Hoare's prediction of the art of software (and hardware) development becoming a proper engineering science with its own body of tools and techniques is now becoming a reality. So the focus of this application oriented workshop was not so much on special academic topics but rather on the many practical aspects of this emerging new technology: verification and validation, and tool support and integration into the software life-cycle. By evaluating the state of the art with respect to industrial applications a discussion emerged among scientists, practising engineers, and members of regulatory and funding agencies about future needs and developments. This discussion lead to roadmaps with respect to the future of this field, to tool support, and potential application areas and promising market segments. The contributions of the participants from industry as well as from the respective national security bureaus were particularly valuable and highly appreciated.